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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/828,994

04/21/2004

Stephan Bolz

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11/04/2005

BAKER BOTTS L.L.P.
PATENT DEPARTMENT
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AUSTIN, TX 78701-4039

EXAMINER

CHAN, EMILY Y

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

Office Action Summary

Application No.

10/828,994

Applicant(s)

BOLZ, STEPHAN

Examiner

Emily Y. Chan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5 and 6 is/are rejected.
- 7) ☒ Claim(s) 2, 4 and 7-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/14/05, 1/25/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 3-6 objected to because of the following informalities: in claim 3, it is unclear where the diagnostic circuit is connected in order to receive the reference voltage since the reference voltage recited in claim 1 is supplied to the amplifier. In dependent claim 6, the recited elements do not further limit any components mentioned in the claim 5. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 5 –6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroeder US Patent No. 6,232,770 in view of Kuhnlein US Patent No. 4,506,339.

With respect to claim 1, Schroeder ('770) expressly discloses an analytical circuit for an inductive sensor, in particular for sensing crankshaft position and rotational speed (Abstract and Fig. 3) as claimed, comprising:

an electromagnetic sensor (MR sensor 14) with external excitation by means of a constant current (current source 30),

a transconductance amplifier (32), and

a logic circuit (37) (see Fig. 3a and Col. 4, lines 46-47).

Schroeder ('770) does not disclose a digitizing circuit comprising a Schmitt trigger.

Kuhnlein ('339) discloses an apparatus for measuring and monitoring the angular velocity of the shaft of a rotational machine (see Figs 1-8) comprising electromagnetic sensors (14,16,18), digitizing circuit and a logic circuit (see Fig 3). Kuhnlein ('339) particularly discloses that his digitizing circuit comprising a Schmitt trigger (38) output a hysteresis-affected output signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the digitizing circuit comprising a Schmitt trigger as taught by Schroeder ('770) into Schroeder ('770)'s apparatus because Kuhnlein ('339) discloses that his invention relates for measuring and monitoring the angular velocity of the shaft of a rapidly rotating machine (see Col. 1, lines 7-10).

With respect to method the claim 5, the claimed steps such as providing an electromagnetic sensor, feeding the sensor signal, converting an output signal, supplying the output signal and forming a hysteresis-free output signal can be performed by Schroeder ('770) in view of Kuhnlein ('339)' apparatus (see rejection for claim 1 above).

3. Claims 3 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Schroeder ('770) in view of Kuhnlein ('339) as applied to claims 1 and 5 above, and further in view of Gokhale et al US Patent No. 5,291,133.

Schroeder ('770) in view of Kuhnlein ('339) do not disclose an upper, a middle and a low voltage threshold and a link break and short circuit are detected when the reference voltage exceeds the threshold voltages.

Gokhale et al ('133) disclose a signal conditioning circuit (see Fig. 5) comprising a magnetoresistive sensor, a minimum voltage detector and a maximum voltage detector. Gokhale et al ('133) exclusively teach a midpoint or reference voltage which is compared with the minimum or low voltage and is compared with the maximum or high voltage as claimed (see Col. 4, lines 65-66).

Therefore, it would have been obvious to one of ordinary skill in the art at the time claimed invention was made to incorporate the minimum and maximum voltage detectors as taught by Gokhale et al ('133) into Schroeder ('770) and Kuhnlein ('339)'s apparatus for the expected benefit of yielding an accurate multibit digital signal which corresponds to the angular position of a rotary object as disclosed by Gokhale et al ('133) (See Col. 1, lines 58-60).

Allowable Subject Matter

4. Claims 2, 4 and 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 2 is indicated allowable because the prior art in the record do not disclose the logic circuit comprising two inverters and four NAND gates and the specific

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connection among the two inverters and four NAND gates. Claims 4 and 7 are indicated allowable because the prior art in the record do not disclose or suggest all the elements in combination recited in the claims 1-4 and 5-7 respectively. Specifically, the prior art does not teach the analytical circuit further comprising a voltage divider and a voltage comparator comparing the reference voltage with a middle voltage threshold. Claims 8-9 are dependent on claim 7 and are indicated allowable accordingly.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bremer et al US Patent No. 4,095,179 disclose a system to determine the position of movable bodies with respect to reference (see Figs. 1-10).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC
10/30/05


VINH NGUYEN
PRIMARY EXAMINER
A.U. 2829
10/31/05